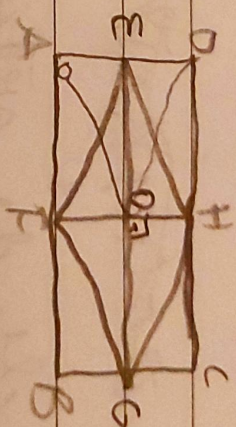


dans l'espace comme un cube



$$\textcircled{1} a) \vec{ED} = \vec{OG} \quad c) \vec{DO} = \vec{FH}$$

V

V

$$b) \vec{AF} = \vec{CH} \quad d) |\vec{C-O}| = |\vec{O-B}|$$

F

V

$$e) |\vec{H-O}| = |\vec{H-D}| \quad f) \vec{H-E} = \vec{O-C}$$

F

F

$$g) |\vec{AC}| = |\vec{BD}| \quad h) |\vec{OA}| = \frac{1}{2} |\vec{DB}|$$

V

V

~~1) $\vec{AF} \parallel \vec{CB}$~~

~~2) $\vec{GE} \parallel \vec{HG}$~~

$$k) \vec{AO} \parallel \vec{OC}$$

$$l) \vec{AB} \perp \vec{OA}$$

$$m) \vec{EO} \perp \vec{CB}$$

$$n) \vec{AO} \perp \vec{HF}$$

$$o) \vec{OB} = -\vec{FE}$$

2) Decida se é verdadeira ou falsa cada uma das afirmações:

a) se $\vec{u} = \vec{v}$, então $|\vec{u}| = |\vec{v}|$. Verdadeira

b) se $|\vec{u}| = |\vec{v}|$, então $\vec{u} = \vec{v}$. Falsa

c) se $\vec{u} \parallel \vec{v}$, então $\vec{u} = \vec{v}$. Falsa

d) se $\vec{u} = \vec{v}$, então $\vec{u} \parallel \vec{v}$. Verdadeira

e) se $\vec{w} = \vec{u} + \vec{v}$, então $|\vec{w}| = |\vec{u}| + |\vec{v}|$
Falsa

f) se $|\vec{w}| = |\vec{u}| + |\vec{v}|$, então \vec{u} , \vec{v} e \vec{w} são paralelos
Falsa

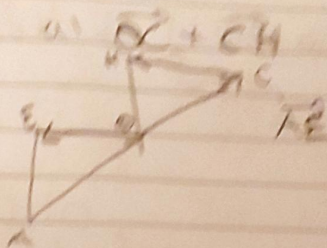
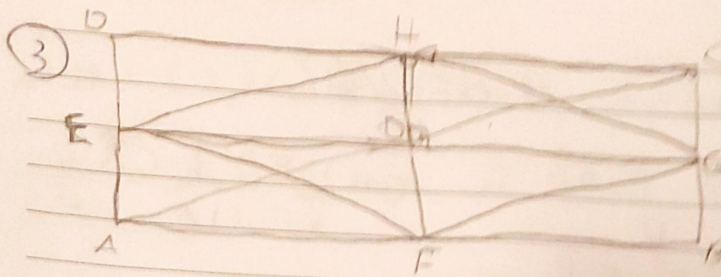
g) se $\vec{AB} = \vec{DC}$, então ABCD (vértices nesta ordem) é um paralelogramo. Verdadeira

h) $|\vec{5v}| = |-\vec{5v}| = 5|\vec{v}|$. Verdadeira

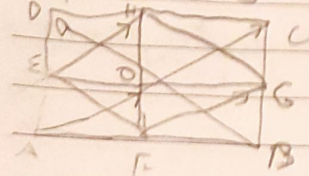
i) os vetores $3\vec{v}$ e $4\vec{v}$ são paralelos e de mesmo sentido
Verdadeira

j) se $\vec{u} \parallel \vec{v}$, $|\vec{u}| = 2$ e $|\vec{v}| = 4$, então $\vec{v} = 2\vec{u}$ ou $\vec{v} = -2\vec{u}$
Verdadeira

k) se $|\vec{v}| = 3$ o vetor de $-10\vec{v}$ é $-\frac{10}{3}\vec{v}$. V



1) $\vec{EH} + \vec{FG}$



$$\vec{EH} = \vec{AB}$$

$$\vec{FG} = \vec{DE}$$

$$R = \vec{AE}$$

1) $2\vec{AE} + 2\vec{AF}$

$$2\vec{AE} = \vec{AD}$$

$$2\vec{AF} = \vec{AB} + \vec{DE}$$

$$\vec{AB} + \vec{DE} = \vec{AE}$$

1) $\vec{EH} + \vec{EF}$

$$\vec{EH} = \vec{AB}$$

$$\vec{EF} = \vec{OB} = \vec{AO} + \vec{OB}$$

$$\vec{AB}$$

2) $\vec{EO} + \vec{BO}$

$$\vec{BO} = \vec{FO}$$

$$\vec{EO} = \vec{AF}$$

$$\vec{AF} + \vec{FO} = \vec{AO}$$

1) $2\vec{OE} + 2\vec{OF}$

$$2\vec{OE} = \vec{GE} + \vec{CE}$$

$$2\vec{OF} = \vec{AF}$$

$$\vec{CE} + \vec{AF} = \vec{AO}$$

1) $\frac{1}{2}\vec{BC} + \vec{EH}$

$$\frac{1}{2}\vec{BC} = \vec{BO} = \vec{OH}$$

$$\vec{EH} = \vec{AB}$$

$$\vec{OH} + \vec{AB}$$

$$\vec{AH}$$

1) $\vec{FE} + \vec{FG} =$

$$\vec{FE} = \vec{OB}$$

$$\vec{FG} = \vec{AB}$$

$$\vec{OB} + \vec{AB} =$$

$$\vec{AO}$$

1) $\vec{OG} - \vec{HO}$

$$\vec{FO} + \vec{AF} =$$

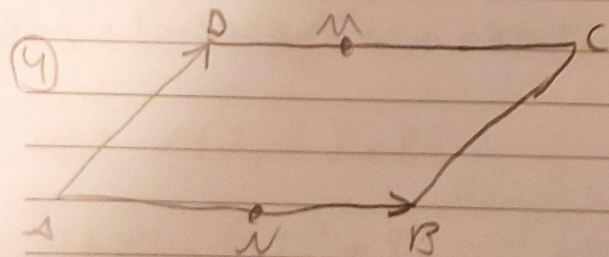
$$\vec{OH} = \vec{FO}$$

$$\vec{AO}$$

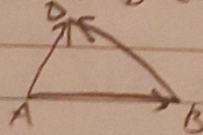
$$\vec{OG} = \vec{AF}$$

1) $\vec{AF} + \vec{FO} + \vec{AO} =$

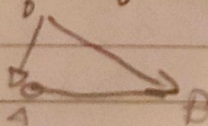
$$\vec{AF} + \vec{FO} = \vec{AO} = \vec{AO}$$



1) $\vec{AO} + \vec{AB} = \vec{BO}$

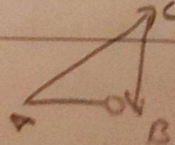


1) $\vec{BA} + \vec{DA} = \vec{DB}$



1) $\vec{AC} - \vec{BC} = \vec{AB}$

$$\vec{AC} + \vec{CB} = \vec{AB}$$

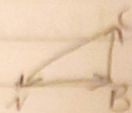


FORONI:

$$d) \vec{AN} + \vec{BC}$$

$$\vec{AN} = \vec{NB}$$

$$\vec{NB} + \vec{BC} = \vec{CN}$$



$$c) \vec{MD} + \vec{NB}$$

$$\vec{MD} = \vec{AN}$$

$$\vec{NB} = \vec{AN}$$

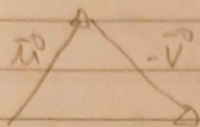
$$\vec{AN} + \vec{AN} = \vec{AN}$$

$$f) \vec{BM} = \frac{1}{2} \vec{AC} \rightarrow \frac{1}{2} \vec{CB} \rightarrow \vec{CM} = \vec{MB}$$

$$\vec{BM} + \vec{MB} = \vec{BB}$$

$$5) \vec{u} - \vec{v}$$

$$a) \vec{u} - \vec{v} = 0$$



$$c) \vec{u} - \vec{v} = 0$$

$$b) \vec{u} - \vec{v} = 0$$

$$d) \vec{u} - \vec{v} = 0$$

$$6) a) \vec{u} - \vec{v} = 0$$

$$b) \vec{u} - \vec{v} = 0$$

$$\vec{x} = -\vec{u} - \vec{v}$$

$$\vec{x} = \vec{u} - \vec{v}$$

$$c) \vec{u} - \vec{v} = 0$$

$$\vec{x} = \vec{v} - \vec{u}$$

$$d) \vec{u} - \vec{v} = 0$$

$$\vec{x} = \vec{u} + \vec{v}$$

$$8) \vec{u} - \vec{v}$$

$$a) \vec{u} - \vec{v}$$

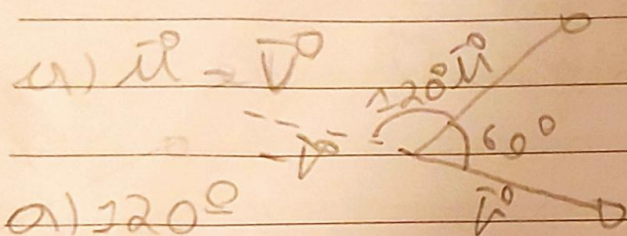
$$b) \vec{v} - \vec{u}$$

$$c) -\vec{v} - 2\vec{u}$$

$$d) 2\vec{u} - 3\vec{v}$$

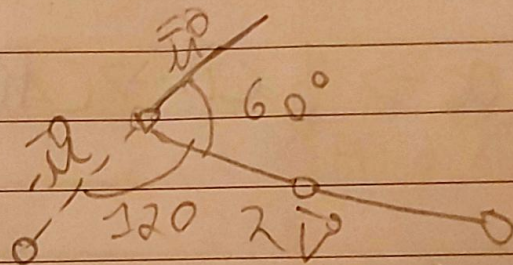
$$-3\vec{v}$$

12) ângulo entre \vec{u} e \vec{v} é 60° determine o ângulo formado pelos vetores

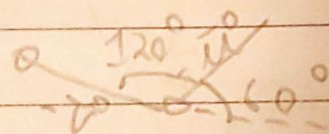


a) 120°

b) $-\vec{u} + 2\vec{v} \rightarrow R = 120^\circ$



c) $-\vec{u} - \vec{v} \rightarrow R = 120^\circ$



d) $3\vec{u} + 5\vec{v} \rightarrow R = 60^\circ$

